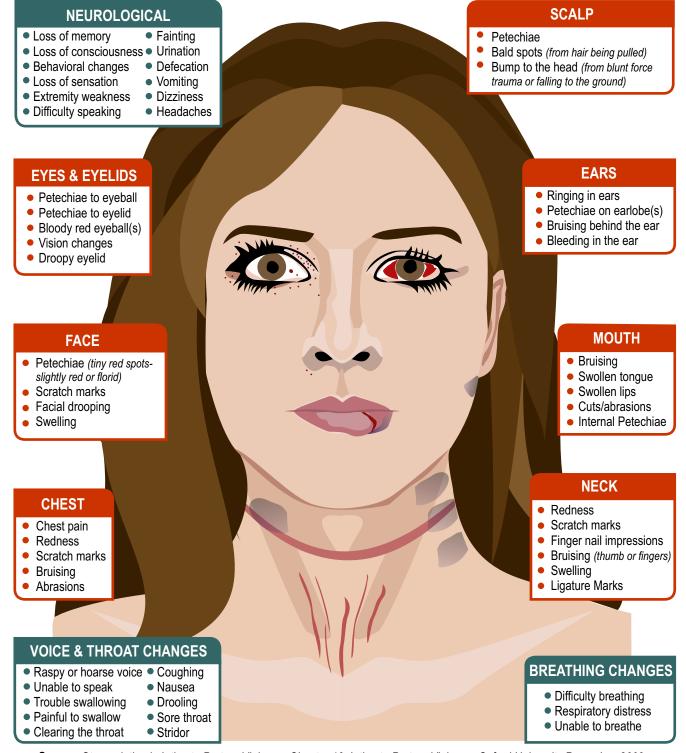
SIGNS AND SYMPTOMS OF STRANGULATION



Source: Strangulation in Intimate Partner Violence, Chapter 16, Intimate Partner Violence. Oxford University Press, Inc. 2009.



Graphics by Yesenia Aceves

www.strangulationtraininginstitute.com



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RECOMMENDATIONS for the MEDICAL/RADIOGRAPHIC EVALUATION of ACUTE ADULT, NON-FATAL STRANGULATION

Prepared by **Bill Smock, MD** and **Sally Sturgeon, DNP, SANE-A** Office of the Police Surgeon, Louisville Metro Police Department

Endorsed by the **National Medical Advisory Committee**: Bill Smock, MD, Chair; Cathy Baldwin, MD; William Green, MD; Dean Hawley, MD; Ralph Riviello, MD; Heather Rozzi, MD; Steve Stapczynski, MD; Ellen Tailiaferro, MD; Michael Weaver, MD



GOALS:
1. Evaluate carotid and vertebral arteries for injuries
2. Evaluate bony/cartilaginous and soft tissue neck structures
3. Evaluate brain for anoxic injury

Strangulation patient presents to the Emergency Department

History of and/or physical exam with ANY of the following:

- Loss of Consciousness (anoxic brain injury)
- Visual changes: "spots", "flashing light", "tunnel vision"
- Facial, intraoral or conjunctival petechial hemorrhage
- · Ligature mark or neck contusions
- Soft tissue neck injury/swelling of the neck/cartoid tenderness
- **Incontinence** (bladder and/or bowel from anoxic injury)
- Neurological signs or symptoms (LOC, seizures, mental status changes, amnesia, visual changes, cortical blindness, movement disorders, stroke-like symtoms.)
- **Dysphonia/Aphonia** (hematoma, laryngeal fracture, soft tissue swelling, recurrent laryngeal nerve injury)
- **Dyspnea** (hematoma, laryngeal fractures, soft tissue swelling, phrenic nerve injury)
- Subcutaneous emphysema (tracheal/laryngeal rupture)

Recommended Radiographic Studies to Rule Out Life-Threatening Injuries* (including delayed presentations of up to 6 months)

- CT Angio of carotid/vertebral arteries

 (GOLD STANDARD for evaluation of vessels and bony/ cartilaginous structures, less sensitive for soft tissue trauma) or
- CT neck with contrast (less sensitive than CT Angio for vessels, good for bony/cartilaginous structures) or
- MRA of neck (less sensitive than CT Angio for vessels, best for soft tissue trauma) or
- MRI of neck (less sensitive than CT Angio for vessels and bony/cartilaginous structures, best study for soft tissue trauma) or
- MRI/MRA of brain (most sensitive for anoxic brain injury, stroke symptoms and intercerebral petechial hemorrhage)
- Carotid Doppler Ultrasound (NOT RECOMMENDED: least sensitive study, unable to adequately evaluate vertebral arteries or proximal internal carotid) *References on page 2

History of and/or physical exam with:

- No LOC (anoxic brain injury)
- No visual changes: "spots", "flashing light", "tunnel vision"
- · No petechial hemorrhage
- No soft tissue trauma to the neck
- No dyspnea, dysphonia or odynophagia
- No neurological signs or symptoms (i.e. LOC, seizures, mental status changes, amnesia, visual changes, cortical blindness, movement disorder, stroke-like symtoms)
- And reliable home monitoring

Discharge home with detailed instructions to return to ED if:

neurological signs/symptoms, dyspnea, dysphonia or odynophagia develops or worsens

(-)

(+)

Continued ED/Hospital Observation (based on severity of symptoms and reliable home monitoring)

- Consult NeurologyNeurosurgery/Trauma Surgery for admission
 - Consider ENT consult for laryngeal trauma with dysphonia



RECOMMENDATIONS for the MEDICAL/RADIOGRAPHIC EVALUATION of ACUTE ADULT, NON-FATAL STRANGULATION

REFERENCES

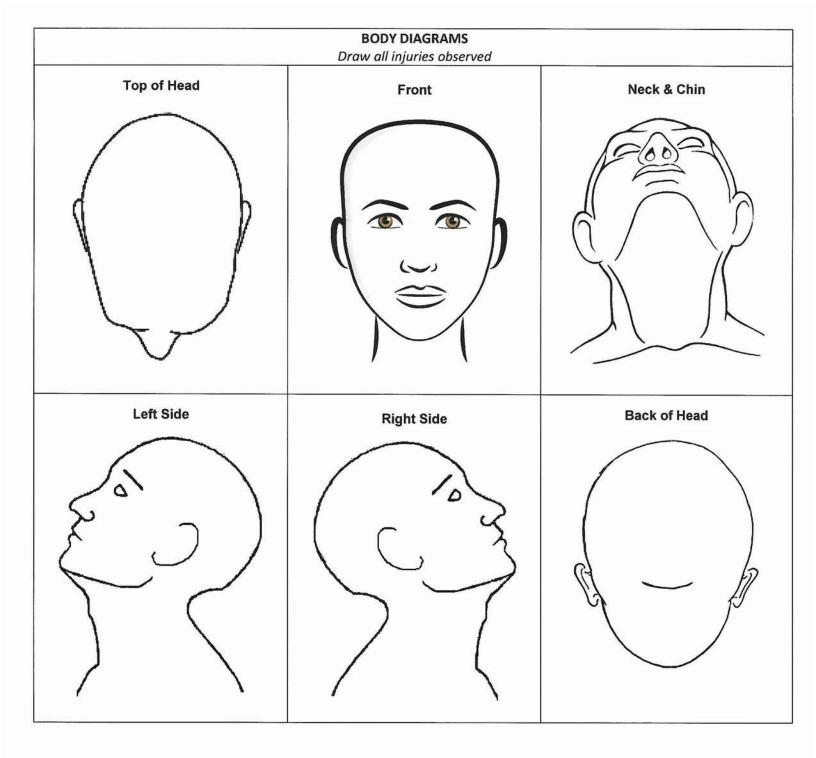


(Recommendations based upon case reports, case studies, and cited medical literature)

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SAN DIEGO COUNTYWIDE STRANGULATION DOCUMENTATION FORM

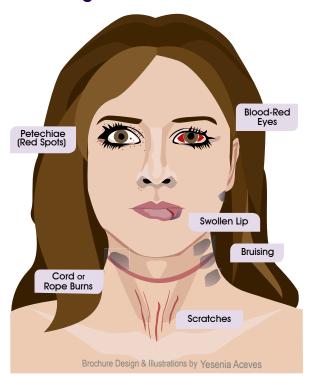
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			strangle: (1 = weak, 10 =)						0
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Describe the suspect's	face/expres	sion during	strangulation:			17/12-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0			
• what did suspect say w	nile strangi	ing you?							
What else did suspect of	do while str	angling you	?						
Were you able to speak	during the	strangulati	on?□Yes□No If yes,	what did you s	ay?				
• Did you do anything to	attempt to	physically s	top the strangulation?	Yes 🗆 No De	escribe:				
What made the suspect								A - 1	
What did you think dur						1.			
Has suspect strangled y	ou on othe	roccasions	?□Yes □No If yes, # of	occasions:	Wh	en:			
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Unable to Breathe			Headache			Trouble Sw	allowing		
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Rapid Breathing			Disorientation			Sore Throa	t		
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Redness Lumps/Bumps Redness									
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□ Swelling □ Scratches or Abrasions	가는 것 같아요. 이렇게 다는 것 같아요. 이렇게 다는 것 같아요. 이렇게 가지 않는 것 않는 것 같아요. 이렇게 가지 않는 것 않는 것 같아요. 이렇게 것 같아요. 이렇게 가지 않는 것 같아요. 이렇게 것 같아요. 이렇게 가지 않는 것 같아요. 이렇게 가지 않는 것 같아요. 이렇게 가지 않는 것 같아요. 이렇게 것 같아요. 이렇게 이렇게 이 같아요. 이렇게 것 같아요. 이 것 같아요. 이렇게 것 같아요. 이 것 같아요. 이 것 않는 것 않는 것 않는 것 않는 것 않는 것 않는 것 이 것 않는 것 않는								
Broken Fingernails									
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OFFICER CHECKLIST

- □ Photograph all injuries and physical evidence.
- □ If strangulation was done using an object, photograph and collect the object.
- Document where all evidence items were found.
- Determine if jewelry was worn by either party during the incident. If so, photograph it and, when feasible, look for pattern injuries.
- □ If defecation or urination in clothing, collect the clothing as evidence.
- □ If victim vomited, take photos of the vomit.
- Consider contacting duty detective.
- Take photographs of BOTH parties to document injuries and/or lack of injuries. Include hands, arms, face, chest, neck and all other areas the parties claim injury or physical contact occurred.
- □ Obtain evidence from hospital, if available, or follow-up to retrieve.

Visible Signs



Additional Signs and Symptoms

A larger version of the graphic above which contains detailed signs and symptoms is available for download at https://www.strangulationtraininginstitute.com/Esperanza

This project is supported all or in part by Grant No. 2014-TA-AX-K008 awarded by the Office on Violence Against Women, U.S. Department of Justice. The opinions, findings, conclusions, and recommendations expressed in this publication/program/exhibition are those of the author(s) and do not necessarily reflect the views of the Department of Justice, Office on Violence Against Women.

ALLIANCE

Strangulation

Observing Changes

Documentation by photographs sequentially for a period of days after the assault is very helpful in establishing a journal of physical evidence.

Victims should also seek medical attention if they experience difficulty breathing, speaking, swallowing or experience nausea, vomiting, lightheadedness, headache, involuntary urination and/or defecation, especially pregnant victims. A medical evaluation may be crucial in detecting internal injuries and saving a life.

Losing Consciousness

Victims may lose consciousness by any one or all of the following methods: blocking of the carotid arteries in the neck (depriving the brain of oxygen), blocking of the jugular veins (preventing deoxygenated blood from exiting the brain), and closing off the airway, making breathing impossible.

Strangulation has only recently been identified as one of the most lethal forms of domestic violence: unconsciousness may occur within seconds and death within minutes. When domestic violence perpetrators choke (strangle) their victims, not only is this a felonious assault, but it may be an attempted homicide. Strangulation is an ultimate form of power and control, where the batterer can demonstrate control over the victim's next breath; having devastating psychological effects or a potentially fatal outcome.

Sober and conscious victims of strangulation will first feel terror and severe pain. If strangulation persists, unconsciousness will follow. Before lapsing into unconsciousness, a strangulation victim will usually resist violently, often producing injuries of their own neck in an effort to claw off the assailant, and frequently also producing injury on the face or hands to their assailant. These defensive injuries may not be present if the victim is physically or chemically restrained before the assault.

Alliance for HOPE International 101 W. Broadway, Ste 1770 San Diego CÁ 92101 888.511.3522 AllianceforHOPE.com

ALLIANCE for INTERNATIONAL

Facts Victims of Strangulation (Choking) **Need to Know**



Strangulationtraininginstitute.com

a program of

Monitor Your SIGNS

Date &	
Time	

Journal Your Signs

Monitor Your Symptoms

Date & Time

Journal Your Symptoms

Date & Time Journal Any Other Sensation

Signs of Strangulation

Head- pinpoint red spots (petechiae) on scalp, hair pulled, bump(s), skull fracture, concussion.

Face- red or flushed, petechiae, scratch marks.

Eyes and Eyelids- petechiae to the left or right eyeball, bloodshot eyes.

Ear- petechiae (external and/or ear canal), bleeding from ear canal.

Nose- bloody nose, broken nose, petechiae.

Mouth- bruising, swollen tongue, swollen lips, cuts/abrasions.

Under the chin- redness, scratch marks, bruise(s), abrasions.

Neck- redness, scratch marks, fingernail impressions, bruise(s), abrasions, swelling, ligature marks.

Chest and Shoulders- redness, scratch marks, bruise(s), abrasions.

Symptoms of Strangulation

Voice changes- raspy and/or hoarse voice, coughing, unable to speak, complete loss of voice.

Swallowing changes- trouble swallowing, painful swallowing, neck pain, nausea/vomiting, drooling.

Breathing changes- difficulty breathing, hyperventilation, unable to breathe.

Behavioral changes- restlessness or combativeness, problems concentrating, amnesia, agitation, Post-traumatic Stress Syndrome, hallucinations.

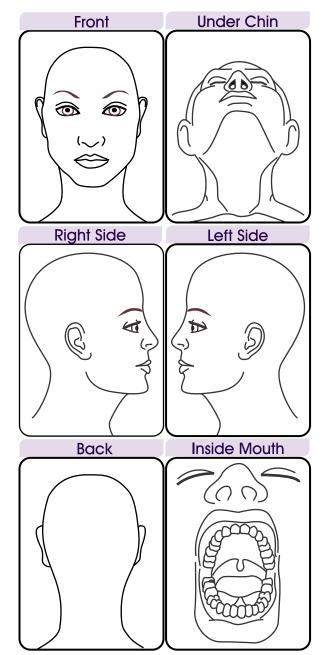
Vision changes- complete loss or black & white vision, seeing 'stars', blurry, darkness, fuzzy around the eyes.

Hearing changes- complete loss of hearing, gurgling, ringing, buzzing, popping, pressure, tunnel-like hearing.

Other changes- Memory loss, unconsciousness, dizziness, headaches, involuntary urination or defecation, loss of strength, going limp.

Diagrams to Mark Visible Injuries

Use a pen or a marker to indicate any visble signs and/or symptoms.



STRANGULATION ASSESSMENT CARD

CHECKLIST

- S Scene & Safety. Take in the scene. Make sure you and the victim are safe.
 - Trauma. The victim is traumatized. Be kind. Ask: what do you remember? See? Feel? Hear? Think?
- Reassure & Resources. Reassure the victim that help is available and provide resources.
- Assess. Assess the victim for signs and Δ symptoms of strangulation and TBI.
- Notes. Document your observations. Put victim statements in guotes.
- Give. Give the victim an advisal about delayed G consequences.
 - Loss of Consciousness. Victims may not remember. Lapse of memory? Change in location? Urination? Defecation?
- Encourage. Encourage medical attention or F transport if life-threatening injuries exist.

TRANSPORT

If the victim is **Pregnant** or has life-threatening injuries which include:

- Difficulty breathing Loss of consciousness
- Difficulty swallowing Petechial hemorrhage

Vision changes

- Urinated
- Defecated

DELAYED CONSEQUENCES

Victims may look fine and say they are fine, but just underneath the skin there would be internal injury and/or delayed complications. Internal injury may take a few hours to be appreciated. The victim may develop delayed swelling, hematomas, vocal cord immobility, displaced laryngeal fractures, fractured hyoid bone, airway obstruction, stroke or even delayed death from a carotid dissection, bloodclot, respiratory complications, or anoxic brain damage.

Taliaferro, E., Hawley, D., McClane, G.E. & Strack, G. (2009), Strangulation in Intimate Partner Violence. Intimate Partner Violence: A Health-Based Perspective. Oxford University Press, Inc.

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STRANGULATION ASSESSMENT CARD						
SIGNS	SYMPTOMS	CHECKLIST	TRANSPORT			
 Red eyes or spots (Petechiae) Neck swelling 	 Neck pain Jaw pain 	Scene & Safety . Take in the scene. Make sure you and the victim are safe.	If the victim is Pregnant or has life-threatening injuries which include: Difficulty breathing Loss of			
 Nausea or vomiting 	 Scalp pain (from hair pulling) 	Trauma . The victim is traumatized. Be kind.	Difficulty swallowing consciousness			
 Unsteady 	 Sore throat Difficulty broothing 	Ask: what do you remember? See? Feel? Hear? Think?	 Petechial hemorrhage Vision changes Urinated Defecated 			
 Loss or lapse of memory Urinated 	 Difficulty breathing Difficulty swallowing Vision changes 	Reassure & Resources . Reassure the victim that help is available and provide resources.	DELAYED CONSEQUENCES Victims may look fine and say they are fine, but			
 Defecated Possible loss of consciousness 	(spots, tunnel vision, flashing lights) ● Hearing changes	Assess. Assess the victim for signs and symptoms of strangulation and TBI.	just underneath the skin there would be internal injury and/or delayed complications. Internal injury may take a few hours to be appreciated. The victim may develop delayed swelling,			
 Ptosis – droopy eyelid 	Light headednessHeadache	Notes . Document your observations. Put victim statements in quotes.	hematomas, vocal cord immobility, displaced laryngeal fractures, fractured hyoid bone, airway obstruction, stroke or even delayed death from			
Droopy faceSeizure	 Weakness or numbness to arms 	G Give. Give the victim an advisal about delayed consequences.	a carotid dissection, bloodclot, respiratory complications, or anoxic brain damage.			
Tongue injuryLip injury	or legs ● Voice changes	Loss of Consciousness. Victims may not remember. Lapse of memory? Change in location? Urination? Defecation?	Taliaferro, E., Hawley, D., McClane, G.E. & Strack, G. (2009), Strangulation in Intimate Partner Violence. Intimate Partner Vio lence: A Health-Based Perspective. Oxford University Press, Inc			
 Mental status changes Voice changes 		Encourage. Encourage medical attention or transport if life-threatening injuries exist.	This project is supported all or in part by Grant No. 2014-TA-AX-K008 awarded by the Office on Violence Agaist Women, U.S. Dept. of Justic The opinions, findings, conclusions, and recommendations expressed this publication are those of the author(s) and do not necessarily reflect views of the Department of Justice, Office on Violence Against Women			

 Neck pain Jaw pain

SIGNS

Red eyes or spots

Nausea or vomiting

Loss or lapse of

(Petechiae)

Neck swelling

Unsteady

memory

Urinated

Defecated

eyelid

Seizure

Lip injury

Droopy face

Tongue injury

 Mental status changes

Voice changes

Possible loss of

Ptosis – droopy

consciousness

 Scalp pain (from hair pulling)

SYMPTOMS

- Sore throat
- Difficulty breathing
- Difficulty swallowing
- Vision changes (spots, tunnel vision, flashing lights)
- Hearing changes
- Light headedness
- Headache
- Weakness or numbness to arms or legs
- Voice changes

ADVISAL TO PATIENT

- After a strangulation assault, you can experience internal injuries with a delayed onset of symptoms, usually within 72 hours. These internal
 injuries can be serious or fatal.
- Stay with someone you trust for the first 24 hours and have them monitor your signs and symptoms.
- Seek medical attention or call 911 if you have any of the following symptoms: difficulty breathing, trouble swallowing, swelling to your neck, pain to your throat, hoarseness or voice changes, blurred vision, continuous or severe headaches, seizures, vomiting or persistent cough.
- The cost of your medical care may be covered by your state's victim compensation fund. An advocate can give you more information about this resource.
- The National Domestic Violence Hotline number is 1-888-799-SAFE.

NOTICE TO MEDICAL PROVIDER

- The Medical Advisory Board of the Training Institute on Strangulation Prevention has developed recommendations for the radiologic evaluation of the adult strangulation victim. In patients with a history of a loss of consciousness, loss of bladder or bowel control, vision changes or petechial hemorrhage the medical provider must evaluate the carotid and vertebral arteries, bony/cartilaginous and soft tissue neck structures and to the brain for injuries. The recommendations with the medical references is available at www.strangulationtraininginstitute.com
- Life-threatening injuries include evidence of petechial hemorrhage, loss of consciousness, urination, defecation and/or visual changes.
 If your patient exhibits any of the above symptoms, medical/radiographic evaluation is strongly recommended. Radiographic testing should include:
 a CT angiography of carotid/vertebral arteries (most sensitive and preferred study for vessel evaluation) or CT neck with contrast, or MRA/MRI of neck and brain.
- ED/Hospital observation should be based on severity of symptoms and reliable home monitoring.
- Consult Neurology, Neurosurgery and/or Trauma Surgery for admission.
- Consider an ENT consult for laryngeal trauma with dysphonia, odynophagia, dyspnea.
- Discharge home with detailed instructions to return to ED if neurological signs/symptoms, dyspnea, dysphonia or odynophagia develops or worsens.



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MAY 5, 2014

TRAINING UPDATE 14-7

NATIONAL JUDICIAL TRAINING UPDATE



BAIL HEARINGS IN FELONY STRANGULATION CASES SEVEN (7) MEDICAL-LEGAL FACTS EVERY JUDGE SHOULD KNOW

QUESTION: When making bail decisions in Felony Strangulation cases, what seven (7) well-established medical-legal facts should every judge (and attorney) be aware of?

1. DEFINITION OF STRANGULATION: Strangulation is a form of asphyxia (lack of oxygen) characterized by closure of the blood vessels and/or air passages of the neck as a result of external pressure on the neck.

2. WIDESPREAD LACK OF UNDERSTANDING:

- Many judicial officers and attorneys do not understand the medical and psychological severity of the act of strangulation.
- In many cases, the lack of observable physical injuries to the victim cause judges to minimize the seriousness of strangulation.
- In order to make sure judges understand the seriousness of strangulation, some prosecutors have asked courts for permission to have an expert in the field of strangulation testify at bail hearings as to the following: see 3-7 below.

3. STRANGULATION IS ONE OF THE MOST LETHAL FORMS OF VIOLENCE USED BY MEN AGAINST THEIR FEMALE INTIMATE PARTNERS:

- The act of strangulation symbolizes an abuser's power and control over the victim. The sensation of suffocating can be terrifying.
- Most victims of strangulation are female.
- The victim is completely overwhelmed by the abuser; she vigorously struggles for air, and is at the mercy of the abuser for her life.
- The victim will likely go through four stages: denial, realization, primal and resignation.
- A single traumatic experience of strangulation or the threat of it may instill such intense fear that the victim can get trapped in a pattern of control by the abuser and made vulnerable to further abuse.

Hon. Alan F. Pendleton, Anoka County District Court, Anoka, Mn 55303; 763-422-7309

TRAINING UPDATE 14-7

MAY 5, 2014

4. THE "NECK" IS THE MOST VULNERABLE PART OF THE BODY:

- Blood and oxygen all flow from the body to your brain through the NECK.
- The NECK is the most unprotected and vulnerable part of the body.
- More serious injuries occur from NECK trauma than any other part of the body.

5. MEDICAL FACTS:

- Strangulation stops the flow of blood to the brain (carotid artery).
- Lack of blood flow to the brain will cause **unconsciousness in 10 seconds.**
- Lack of blood flow to the brain will cause death in 4 minutes.
- It takes very little pressure to stop blood flow to the brain (4 psi):
 - a. It takes less pressure than opening a can of soda (20 psi);
 - b. It takes less pressure than an average handshake (80-100 psi);
 - c. It takes less pressure than pulling the trigger of a handgun (6 psi).
- It only takes 33 psi to fracture a victim's larynx (far less than a handshake).

6. LACK OF EXTERNAL EVIDENCE ON THE SKIN:

- CAUTION: Lack of visible findings (or minimal injuries) does not exclude a potentially life threatening condition. Strangulation often leaves no marks.
- A study by the San Diego City Attorney's Office of 300 domestic violence cases involving strangulation revealed that up to 50% of victims had no visible injuries.

7. STRANGULATION CAN CAUSE SUBSTANTIAL INJURIES (OFTEN DELAYED) SUCH AS:

- a. Physical injuries (e.g. death, unconsciousness, fractured trachea/larynx, internal bleeding (*hemorrhage*) and artery damage (*intimal tears*), dizziness, nausea, sore throat, voice changes, throat and lung injuries, swelling of the neck (*edema*), breathing and swallowing problems, ringing in the ears (*tinnitus*), vision change, miscarriage);
- b. **Neurological injuries** (e.g. facial or eyelid droop (*palsies*), left or right side weakness (*hemiplegia*), loss of sensation, loss of memory, paralysis);
- c. **Psychological injuries** (e.g. PTSD, depression, suicidal ideation, memory problems, nightmares, anxiety, severe stress reaction, amnesia and psychosis);
- d. **Delayed fatality** (e.g. death can occur days or weeks after the attack due to carotid artery dissection and respiratory complications such as pneumonia, ARDS and the risk of blood clots traveling to the brain (*embolization*).

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HISTORICAL FACTS OF INTEREST

- Historically, strangulation has been minimized by professionals due to the lack of visible injuries and the lack of medical training. It wasn't until the deaths of two teenagers in 1995 that caused the San Diego City Attorney's Office to conduct a study of 300 police reports and realize the lethality and seriousness of strangulation.
- 2. Thirty-eight states have now passed statutes in the last ten years to recognize this oversight, increase awareness, enhance victim safety and offender accountability.
- 3. Strangulation is more common than professionals have realized. Recent studies have now shown that 34% of abused pregnant women report being "choked" (Bullock, 2006); 47% of female domestic violence victims reported being "choked" (Block, 2000) and most experts believe the rate is higher given minimization by victims and the lack of education. A recent study at the New Orleans Family Justice Center found almost 60% of the victims seeking services reported prior strangulation (Alliance).
- 4. Victims of multiple strangulation "who had experienced more than one strangulation attack, on separate occasions, by the same abuser, reported neck and throat injuries, neurologic disorders and psychological disorders with increased frequency." (Smith, 2001).
- 5. Almost half of all domestic violence homicide victims had experienced at least one episode of attempted strangulation prior to a lethal or near lethal violent incident (Glass, Sage, 2008).
- 6. Victims of prior attempted strangulation are 7 times more likely of becoming a homicide victim. (Glass, et al, 2008; National Institute on Strangulation Prevention).
- 7. Today, training materials on strangulation are readily available at the National Training Institute on Strangulation Prevention at <u>www.strangulationtraininginstitute.com</u>.
- 8. Juries and some judges have difficulty understanding the serious nature of the crime without clear guidance from expert witnesses and professionals with specialized training.
- 9. Effective intervention in non-homicide strangulation cases will increase victim safety, hold offenders accountable for the crimes they commit and prevent future homicides.

STRANGULATION IS OFTEN ONE OF THE LAST ABUSIVE ACTS COMMITTED BY A VIOLENT DOMESTIC PARTNER BEFORE MURDER.

2004 Report, Hennepin County Domestic Fatality Review Team (Minneapolis, MN)

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